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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,367	03/22/2004	Vincent C. Moyer	10040349-1	9704
57299	7590	09/12/2007	EXAMINER	
Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			CHOWDHURY, AFROZA Y	
			ART UNIT	PAPER NUMBER
			2629	
			NOTIFICATION DATE	DELIVERY MODE
			09/12/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

avagoip@system.foundationip.com  
kathy.manke@avagotech.com  
scott.weitzel@avagotech.com

## Office Action Summary

Application No.

10/806,367

Applicant(s)

MOYER ET AL.

Examiner

Afroza Y. Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6, 17, 18, and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment received on **August 3, 2007** has been entered. Claims 1-27 are currently pending. Applicant's newly added claims and arguments are addressed herein below.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US Patent 4794384).

As to claim 6, Jackson teaches a method comprising:

aligning an optics module (fig. 2) of an optical mouse with an imaging surface (fig. 2(14));

obtaining a first image of the imaging surface (col. 5, lines 45-50), via application of substantially coherent illumination from the optics module to the imaging surface (fig. 2(14));

analyzing (col. 4, lines 23-36) the first image to identify an interference pattern associated with a contaminant (col. 4, lines 25-27, Please note: Contaminant is the same as a diffused object);

identifying the interference Pattern, if a parameter of the interface pattern exceeds predetermined threshold to compare samples (col. 6, lines 30-35, col. 9, lines ).

Jackson does not explicitly disclose that the interface pattern as a contaminant if the pattern exceeds a threshold value. However, one skill in the art would recognize that Jackson clearly teaches that the interference pattern as a contaminant (diffused object) exceeds a threshold value (See col. 4, lines 25-3, *"It is well known in the art that a speckle pattern is formed by the interference of coherent light scattered from a diffused object"*. Also see col. 6, lines 30-35, *"Since the speckle pattern being sampled can, in a sense, be thought as composed of equal mixers of light and dark features, the sample window can be determined when the accumulated photocurrent for half of the detector cells have exceed a predetermined threshold."*)

4. Claims 1, 17, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US Patent 4794384) in view of Chang et al. (US 2004/0246232).

As to claim 1, Jackson discloses an optical mouse where an optics module (fig. 2) including an at least partially coherent light source (fig. 2(12), col. 3, lines 60-67) with

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at least one surface (fig. 2(30)) of the optics module exposed to an opening (fig. 2(68)) of the optical mouse (fig. 2(10)).

Jackson does not teach any barrier for the optical cursor control device.

Chang et al. teaches an optic mouse including a barrier (fig. 2(122), page 2, [0015], lens).

Therefore, it would have been obvious to one skill in the art at the time of invention was made to combine the two optical mice of Chang et al. and Jackson to construct an optical mouse with a barrier between a contaminant and at least one exposed surface of optical module in order to neutralize contaminants.

As to claim 17, Jackson teaches an optical mouse, the mouse comprising:

a housing (fig. 2(22)) having a surface with an opening (fig. 2(68));

a optics module (fig. 2) including a substantially coherent light source (fig. 2(12), col. 3, lines 60-67) disposed within the housing (fig. 2(22)) with at least one surface of the optics module exposed (fig. 2(30)) to the opening (fig. 2(68)) of the housing (fig. 2(22)) and an environment external (fig. 2(14)) to the opening.

Jackson does not teach any barrier for the optical cursor control device.

Chang et al. teaches an optic mouse including a barrier (fig. 2(122), page 2, [0015], lens).

Therefore, it would have been obvious to one skill in the art at the time of invention was made to combine the two optical mice of Chang et al. and Jackson to

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make an optical mouse with a barrier between a contaminant and at least one exposed surface of optical module in order to neutralize contaminants.

As to claim 20, Chang et al. teaches a mouse wherein the barrier structure comprises: a transparent element (fig. 2(122), page 2, [0015], lens) positioned to block the opening of the housing.

5. Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US Patent 4794384) in view of Chang et al. (US 2004/0246232) and in further view of Bean et al. (US 2002/0180880).

As to claims 2 and 18, Jackson (as modified by Chang et al.) discloses an optical mouse with a barrier.

Jackson (as modified by Chang et al.) does not teach a barrier with an anti-static coating.

Bean et al. teaches a lens with a conductive coating (page 1, [0013]).

Therefore, it would have been obvious to one skill in the art at the time of invention was made to use the idea of Bean et al. of using conductive coating on a surface into the optical mouse of Jackson (as modified by Chang et al.) to construct an optical mouse with an anti-static coating on a portion of the at least one exposed surface of the optics module in order to repel contaminants.

***Response to Arguments***

6. Applicant's arguments filed on **June 5, 2007** have been fully considered but they are not persuasive.

Applicant argues that Jackson does not disclose or suggest analyzing an image to identify an interface pattern associated with contaminant.

The examiner disagrees with Applicant assertion. Jackson clearly states that analyzing an image to identify an interface pattern associated with contaminant (See col. 4, lines 25-31. Please note that the "diffused object" is the same as applicant's "contaminant").

Applicant also states that Jackson does not teach an interface pattern as a contaminant if a parameter of the interface pattern exceeds a threshold value.

The examiner again disagrees with Applicant. Because Jackson discloses (col. 4, lines 25-27) that "a speckle pattern is formed by the interference of coherent light scattered from different object."

Here, Jackson states that identifying the interference pattern as a contaminant (diffused object). In col. 6, lines 30-35, Jackson clearly states, "*Since the speckle pattern being sampled can, in a sense, be thought as composed of equal mixers of light and dark features, the sample window can be determined when the accumulated photocurrent for half of the detector cells have exceed a predetermined threshold.*"

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afroza Y. Chowdhury whose telephone number is 571-270-1543. The examiner can normally be reached on 7:30-5:00 EST, 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

8/30/2007



AMARE MENGISTU  
SUPERVISORY PATENT EXAMINER